National Institute of Environmental Health Sciences

Emerging arthropod-borne diseases of companion animals in Europe

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Abstract:

Vector-borne diseases are caused by parasites, bacteria or viruses transmitted by the bite of hematophagous arthropods (mainly ticks and mosquitoes). The past few years have seen the emergence of new diseases, or re-emergence of existing ones, usually with changes in their epidemiology (i.e. geographical distribution, prevalence, and pathogenicity). The frequency of some vector-borne diseases of pets is increasing in Europe, i.e. canine babesiosis, granulocytic anaplasmosis, canine monocytic ehrlichiosis, thrombocytic anaplasmosis, and leishmaniosis. Except for the last, these diseases are transmitted by ticks. Both the distribution and abundance of the three main tick species, Rhipicephalus sanguineus, Dermacentor reticulatus and Ixodes ricinus are changing. The conditions for such changes involve primarily human factors, such as travel with pets, changes in human habitats, social and leisure activities, but climate changes also have a direct impact on arthropod vectors (abundance, geographical distribution, and vectorial capacity). Besides the most known diseases, attention should be kept on tick-borne encephalitis, which seems to be increasing in western Europe, as well as flea-borne diseases like the flea-transmitted rickettsiosis. Here, after consideration of the main reasons for changes in tick vector ecology, an overview of each "emerging" vector-borne diseases of pets is presented.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Extreme Weather Event, Human Conflict/Displacement, Meteorological Factors, Temperature

Extreme Weather Event: Flooding

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Flea-borne Disease, Fly-borne Disease, Mosquito-borne Disease, Tick-borne Disease

Flea-borne Disease: Cat Scratch Disease

Fly-borne Disease: Leishmaniasis

Mosquito-borne Disease: Dirofilariasis

Tick-borne Disease: Anaplasmosis, Ehrlichiosis, Plague, Tick-borne Encephalitis

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified